

LISTING OF CLAIMS

This listing of claims replaces all prior versions and listings of claims in the patent application.

Claims 1-16 (cancelled).

Claim 17 (new): A silent surface fastener comprising: a first surface fastener member having a plurality of engaging elements on a surface of a first flat base material; and a second surface fastener member having a plurality of engaging elements on a surface of a second flat base material, the second surface fastener being joined to the first surface fastener member through a plane,

being characterized in that at least one of the first and second surface fastener members has noise suppressing means and auxiliary engaging and disengaging means which engages and disengages from a mating one without generation of a noise at a time of engagement or disengagement, and

a level of a peeling noise is 80 dB or less.

Claim 18 (new): The silent surface fastener according to claim 17, wherein both the first and second surface fastener members are fiber products.

Claim 19 (new): The silent surface fastener according to claim 17, wherein both the first and second surface fastener members include a synthetic resin molded article.

Claim 20 (new): The silent surface fastener according to claim 17, wherein the first surface fastener member includes a synthetic resin molded article, and the second surface fastener member is a fiber product.

Claim 21 (new): The silent surface fastener according to claim 17, wherein the auxiliary engaging and disengaging means is engaging and disengaging means using any one of magnetism, adhesiveness, suction, fitting and temperature transformation or a combination of them.

Claim 22 (new): The silent surface fastener according to claim 18, 20 or 21, wherein the engaging elements are engaging elements formed integrally on the surfaces of the flat base materials made of a fiber material, and

the noise suppressing means satisfies at least any of following requirements (a) to (c):

(a) element density of the engaging elements is 35 (pieces/cm²) or less;

(b) tensile strength of the engaging elements is 2.5 to 5.0 (cN/T) and elastic modulus of the engaging elements is 19.0 to 38.0 (cN/T); and

(c) apparent density of the first and second flat base materials is 0.5 (g/cm³).

Claim 23 (new): The silent surface fastener according to claim 22, wherein the noise suppressing means includes a fact that a value of a ratio (A/B) between an area A of a region in which an acoustic spectrum of the peeling noise Fourier-transformed in a region of 100 Hz to 15000 Hz is 100 Hz to 3000 Hz and an area B of a region in which the acoustic spectrum of the peeling noise Fourier-transformed in the region of 100 Hz to 15000 Hz is 3000 Hz to 15000 Hz is 0.4 or more.

Claim 24 (new): The silent surface fastener according to claim 19, 20 or 21, wherein the engaging elements are engaging elements formed integrally on the surfaces of the flat base materials obtained by molding a synthetic resin material, and

the noise suppressing means satisfies at least any of following requirements (d) and (e):

(d) element density of the engaging elements is 250 (pieces/cm²) or less; and

(e) tensile strength of the engaging elements is 50 (MPa) or less and elastic modulus of the engaging elements is 1.1 (GPa) or less.

Claim 25 (new): The silent surface fastener according to claim 24, wherein the noise suppressing means includes a fact that a value of a ratio (A/B) between an area A of a region in which an acoustic spectrum of the peeling noise Fourier-transformed in a region of 100 Hz to 15000 Hz is 100 Hz to 3000 Hz and an area B of a region in which the acoustic spectrum of the peeling noise Fourier-transformed in the region of 100 Hz to 15000 Hz is 3000 Hz to 15000 Hz is 0.4 or more.

Claim 26 (new): The silent surface fastener according to claim 18, 20 or 21, wherein respective flat base materials made of fiber are a fiber woven fabric, a fiber knitted fabric or an unwoven fabric.

Claim 27 (new): The silent surface fastener according to claim 17, wherein respective engaging elements of the first and second surface fastener members have a hook-like shape, a mushroom-like shape or a modified shape thereof.

Claim 28 (new): A silent surface fastener comprising: a first surface fastener member having a plurality of engaging elements formed integrally on a surface of a first flat base material made of a fiber material; and a second surface fastener member having a plurality of engaging elements formed integrally on a surface of a second flat base material made of a fiber material, the second surface fastener member being joined to the first surface fastener member through a plane,

being characterized in that at least one of the first and second surface fastener members has noise suppressing means in which density of the engaging elements is low and auxiliary engaging and disengaging means having magnetism which joins itself to a mating one without generation of a noise at a time of engagement or disengagement, and a level of a peeling noise is 80 db or less.

Claim 29 (new): The silent surface fastener according to claim 28, wherein the density of the engaging elements is 35 (pieces/cm²) or less.

Claim 30 (new): The silent surface fastener according to claim 28 or 29, wherein the auxiliary engaging and disengaging means using magnetism is a magnetic linear material having magnetism.

Claim 31 (new): The silent surface fastener according to claim 30, wherein respective flat base materials are a foundation structure constituted of a weaving structure or knitting structure composed of warps and wefts, and the warps and/or wefts comprise the magnetic linear material having magnetism.

Claim 32 (new): The silent surface fastener according to claim 31, wherein the respective flat base materials are joined to each other by magnetically attracting the foundation structures including the magnetic linear material having magnetism.

Claim 33 (new): The silent surface fastener according to claim 28 or 29, wherein respective engaging elements include engaging elements having magnetism.